



**Remarks of
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It is a great pleasure to be here today to discuss weather and highways, and how the meteorological and transportation communities can work together more effectively to make traveling on our Nation's roads safer and more reliable.

First, however, I want to thank you for participating in this important forum. The goals and objectives you are discussing here are of great interest to Secretary Mineta and the rest of us at the Department of Transportation. We look forward to hearing your suggestions about how we can work together more closely to address several key questions:

- How does weather affect the safety of our citizens while traveling on the Nation's highways?
- How does weather's impact on transportation affect our Nation's economic vitality? and
- Assuming that your answers to those questions are "Negatively," how can we use our collective resources to address and mitigate those adverse effects?

Secretary Mineta has a vision for the future of our transportation system—a vision that you will find spelled out in the Department's recently released Strategic Plan for the next five years. That Plan describes DOT's commitment to working with other agencies at all levels of government to develop safer, simpler and smarter transportation solutions. Improving safety, of course, continues to be a core objective for this Secretary.

This evening, however, I want to talk about three separate avenues through which our Department is working to address complex issues involving the intersection of weather with the safety and efficiency of our surface transportation system. First, I will talk about DOT's fundamental commitment to alleviating the impacts of adverse weather on surface

transportation, and to improving safety and efficiency on our highways. Second, I will share with you some examples of how DOT and the National Oceanic and Atmospheric Administration are working together to support advances in this area. Finally, I will spend a few minutes on how we have been working with all of you to improve the safety and efficiency of our surface transportation system.

DOT's Commitment to Road Safety and Weather Research

We all know that weather poses difficult safety challenges for transportation. That's why we have put such a strong emphasis on using research and technology to improve our ability to predict and manage changes in the weather and their impact on our surface modes of transportation.

Just to give you an example of the magnitude of these challenges, in 2001 there were nearly 7,000 fatalities and over 600,000 injuries that occurred under adverse weather conditions on our Nation's roadways. The human and economic costs attributable to these mishaps are staggering.

At the same time, we estimate that 15 percent of traffic congestion across the country is due to rain, snow, and reduced visibility. Weather-related delays in metropolitan areas amount to an estimated \$3.4 billion in freight costs alone each year.

The impact of weather on the safety and efficiency of our highway system, in other words, is a powerful argument for decisive action by policy makers and stakeholders alike.

Our experience over the past few years under TEA-21 has shown what a difference more advanced road weather information can make and how it can help us develop creative solutions. Let me give you just three examples:

- In Idaho, maintenance managers have been able to pre-treat roads with chemicals under impending snow and ice conditions with far greater reliability based on improved weather forecasts. This change has led to an 83 percent reduction in crashes, a 62 percent reduction in labor costs, and an 83 percent reduction in materials used. So we know that, with the right information, at the right time, maintenance managers can take proactive steps that sharply reduce the risks to drivers while also saving precious funds for transportation agencies.
- In Florida, the city of Clearwater has integrated its weather monitoring system into its traffic signal control system so that when it begins to rain at the beach and people start heading home, the traffic lights are automatically sequenced to favor their departure – making their mass exodus faster and safer. This is a simple step that reduces both congestion and aggravation.

- In Tennessee, a section of I-75 that is prone to fog experienced two hundred crashes between 1973 and 1994. Since 1994, when they installed a fog monitoring, warning, and control system on this section, they have seen just one crash. Better weather information has proven to be a matter of life and death on this particular stretch of highway, and we commend the transportation planners in Tennessee for using available technologies to make this portion of the interstate system a safer place to travel.

Our Federal Highway Administration has a long history of working with its constituents to develop effective solutions. In its early years, FHWA's focus was on building highways—notably our Interstate Highway System. Over the past decade, however, the agency has increasingly shifted its focus to maximizing the potential of our existing highways by helping states to operate the system more effectively through the deployment of modern technologies. Under the leadership of Administrator Mary Peters and her predecessor, Ken Wyckle, we have made particular progress in using weather information to improve safety and efficiency. Much of this is a reflection of the impressive technological advances we have seen in recent years, like traffic signal control systems, 5-1-1 and other traveler information systems, and hurricane evacuation management systems.

To date, however, most solutions have been site-specific. Our challenge now is to be architects of the future by developing these solutions system-wide. That's why we have created FHWA's Road Weather Management Program. The goal of this program is to apply advanced weather products to our highways to help achieve a state-of-the-art, 21st century transportation system. For example, by working with the maintenance community, the private sector, and the weather research community, FHWA has leveraged millions of dollars of advanced weather research into its Maintenance Decision Support System. This system takes advanced weather model outputs and provides recommended actions for maintenance managers across the country.

In an effort to maximize State DOT investments in the more than two thousand weather sensors along our roadways, FHWA is working with States, universities, and the National Weather Service to standardize the data we get from those sensors, to improve its quality, and to see that it is shared across jurisdictions. FHWA has also begun to explore new ways of modeling traffic under varying weather conditions. Only when we understand better how drivers and vehicles interact with the road and with each other under adverse weather conditions can we develop the means to better control traffic through weather-responsive traffic signal timing plans and other related advances.

While these and other efforts are well underway, we are also looking forward to the results of an ongoing study by the National Academy of Sciences. This study will outline research needs and provide recommendations for the future. We expect that report to be finalized in early January, and the results will be shared at the annual meetings of the Transportation Research Board and the American Meteorological Society.

Unquestionably, we are making real progress in understanding the impact of weather on

our highways. The responses thus far have saved lives and improved the efficiency of our surface transportation system. At the same time, however, when you compare the safety track record of surface transportation to that of air travel, it is clear that further improvements must be made to reduce the number of fatalities on our Nation's highways.

Let me explain: In 1997, a White House Commission on Aviation Safety and Security recommended an 80 percent reduction in weather-related fatal aviation accidents as a 10-year national goal. At the mid-way point, I am delighted to tell you that weather-related accidents – fatal and nonfatal – for general aviation--private flying and business flying--are on strong downward trends. Weather-related fatal accidents decreased from an average of 112 per year in the 1994-to-1996 timeframe to just 45 in 2001.

These safety improvements are being achieved in part due to significant investments in the National Aviation Weather Program. As you will have seen in the White Paper developed for this Forum by William Mahoney of NCAR and Leland Smithson at AASHTO, DOT is investing about \$25 million annually in aviation weather research.

Our mission now is to make similar improvements to safety on our Nation's highways. We know that this will require a long-term effort and significant resources. Congress is currently considering the next six-year reauthorization for surface transportation. The Administration's proposed bill – the Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003, or SAFETEA, calls for a \$247 billion investment in highways, transit, and rail for fiscal years 2004 through 2009. While SAFETEA represents a 19 percent increase over the funding levels available under TEA-21, it includes a doubling of funding for safety programs and a wide range of program improvements designed to improve the safety of our Nation's transportation system.

You will be particularly pleased to hear that the proposal includes significant funding for surface transportation research and development, new investments in ITS, and an increased emphasis on the safe and efficient operation of our surface transportation system, including road weather management. More specifically, it calls for an annual investment of \$121 million in ITS R&D, provides for the establishment of Real-Time Information Systems to support the data needs of highway operations and to provide high-quality traveler information; and gives States \$135 million annually in financial incentives to support the use of ITS technologies to improve the performance and operation of the transportation system.

This reauthorization proposal reflects our strong commitment to furthering the research that is required to build data collection, information management, and technology deployment capabilities that will be necessary to take road weather management to the next level. That is why it is so critical that Congress approve a six-year surface transportation reauthorization package before the current five-month extension expires at the end of February.

DOT/NOAA Cooperation

Increased financial resources and operational improvements are certainly a big part of addressing weather-related challenges, but there are other tools available to us as well. That is why I am so excited about the strong partnership that DOT and NOAA have been building. By combining DOT's understanding of our Nation's transportation system with NOAA's scientific expertise we can accomplish a great deal, and we are already seeing the results of our collaboration.

For example, we are jointly working to develop a high-accuracy Nationwide Differential Global Positioning System – or NDGPS – and are in the process of locating differential GPS sites across the country to enable positioning service that provides much higher levels of precision. Accurate positioning is absolutely essential for surface transportation, both in terms of the infrastructure itself and for the vehicles using the infrastructure. Such capabilities lay the groundwork to improve traveler safety and provide other navigation benefits. But, we are also installing monitoring devices at these NDGPS sites to collect water vapor data as a critical input to NOAA's efforts to improve weather forecasting technology. This is a great example of a win-win project that helps both of us better achieve our missions.

Building on this track record, we are now expanding this collaboration to address road weather management. The *Weather Information for Surface Transportation National Needs Assessment Report* – the so-called WIST Report – was released earlier this year. That report lays the foundation for our coordinated approach, and marked the first time the weather community has worked with the surface transportation community to articulate our collective needs for weather information. Addressing the needs of surface transportation requires information specifically tailored to meet the requirements of transportation managers, industry, and the traveling public. The baseline provided by the WIST report will allow each of us to make effective contributions to the success of this new model, and allows developers to make the most of their investments in advanced surface transportation weather systems.

It has been a great privilege to work with NOAA's Administrator, Vice Admiral Conrad Lautenbacher, on this effort. FHWA Administrator Peters has also expressed her commitment to continued collaboration with NOAA. Our work thus far is just a beginning, and we are now mapping out a more detailed, long-term plan.

Over the next five years, NOAA and DOT will work collaboratively to build on the WIST Report, bringing together the expertise of the weather and transportation communities in a way we just haven't seen before.

While NOAA moves forward in surface transportation weather research, DOT will concentrate on developing tools and solutions for the transportation community, turning this information into strategies that make the roads safer and more efficient. Together, our two agencies will define research needs to address unmet requirements, share R&D results, and explore outreach and education efforts.

Stakeholder Involvement

Finally – and perhaps most importantly – it is critical that we engage our stakeholders in this effort, from Federal agencies to state and local officials to truckers navigating I-95. Each of our constituencies must play an active role to ensure that we are developing solutions that meet our mutual objectives. At the Federal level, DOT and NOAA will work to oversee the development of a coordinated framework, using open standards. We plan to involve users, providers, industry, and the research community.

It is also important to note that efforts are underway to develop an academic discipline focused specifically on the effects of weather on surface transportation. The University of North Dakota has taken the lead in developing a program in this new field, and we look forward to hearing other institutions join in that work. Research in both the transportation and weather communities is multi-faceted and ever advancing. The challenge will be to take advantage of research findings and technological advances from both our communities, while ensuring that the product of that research addresses the real-world needs of transportation decision makers.

We will need to coordinate across multiple agencies and disciplines in order to identify research gaps and needs, guide the development of research programs, and develop performance measures. We must work together to see that the right weather models are developed and that they work in ways that enable the private sector to tailor those products to their specific needs. Finally, we must put a transportation information infrastructure in place that carries these advanced weather products to all of our customers when they need it most – when it can serve to keep them safe on our roads.

Let me just say that the most important message that I took away from the Mahoney-Smithson White Paper was that even within DOT itself, the potential benefits from enlisting all of our component agencies in an integrated program for addressing weather issues are immense. I agree with that assessment, and I plan to take it up with our Modal Administrators.

Conclusion

We have an important vision: system-wide improvements that will make our roads safer and more efficient under all types of adverse weather. By realizing that vision, we can help save lives and keep our economy working. We envision a system that will allow those who use our transportation networks – drivers, freight shippers, and transit operators – to make more informed decisions.

By integrating intelligent weather information with intelligent transportation technology we can deliver a safer, simpler, and smarter transportation system. We at the Department of Transportation look forward to working with all of you to achieve these critical objectives.

Thank you for inviting me to be with you this evening.

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